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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,953	04/13/2004	William D. Sigworth	0176-PA-CIP	5455

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EXAMINER

THEXTON, MATTHEW

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/823,953

Applicant(s)

SIGWORTH, WILLIAM D.

Examiner

Matthew A. Thexton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>three sheets</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claims Analysis

Claim 1 is directed to processes comprising mixing three components

- (1) at least one natural fiber,
- (2) at least one polyolefin resin, and
- (3) at least one functionalized polyolefin coupling agents which has a MWD of greater than 2.5 and comprises more than 1 mmole of grafted polar monomer per 100 grams of coupling agent.

Dependent claims 2-13 further limit the type of natural fiber, the amount of natural fiber, the amount of grafted polar monomer, the presence and type of comonomers in the polyolefin, the type of polar monomer.

Independent claim 14 is directed to a material substantially corresponding to that defined in claim 1.

Independent claim 15 is directed to a material substantially corresponding to that defined in claim 1 with the addition of a lubricant selected from the group consisting of fatty acid amides and fatty acid esters.

35 USC § 102 and 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over “Epolene Polymers” (publication WA-5E, November 2002, Eastman Chemical Company) taken with evidentiary reference “Epolene Waxes” (publication F-301E, December 1996, Eastman Chemical Company).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

“Epolene Polymers” suggests using Epolene coupling agents in composites of natural fibers used to reinforce polyolefins (second page, paragraphs 1 and 4).

“Epolene Waxes” establishes that maleated polyolefins C-16, C-18, E-43 were available and were advertised to have certain MWDs, at the time of the invention. In particular, the maleated polyethylenes C-16 and C-18 have MWDs of 4.6 and 2.6 respectively (page 8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the maleated polyethylenes of "Epolene Polymers" in the manner suggested in that reference.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over "Epolene Polymers" (publication WA-5E, November 2002, Eastman Chemical Company) taken with evidentiary reference "Epolene Waxes" (publication F-301E, December 1996, Eastman Chemical Company) and further in view of Wolcott et al. ("Coupling Agent/Lubricant...").

The present claim is broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

References "Epolene Polymers" and "Epolene Waxes" are discussed immediately above, which is incorporated here by reference.

Wolcott et al. discloses the use of fatty ester amide lubricant for these wood plastic composites. It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the lubricants of Wolcott et al. in the mixtures of the rejection based on the combination of references since it is suggested by Wolcott et al. to be beneficial.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Godavarti et al. (US 6265037-B1) in view of "Epolene Polymers" (publication WA-5E,

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November 2002, Eastman Chemical Company) taken with evidentiary reference

“Epolene Waxes” (publication F-301E, December 1996, Eastman Chemical Company).

The present claims are broadly discussed hereinabove in the section **Claims Analysis** which is incorporated by reference.

Godavarti et al. (US 6265037-B1) discloses polypropylene filled mixtures using polypropylene, a compatibilizer of maleic anhydride modified polyolefin (claim 13), and wood fiber (claims). Although only maleated polypropylenes are exemplified (column 17, line 7 to column 18, line 12), the reference suggests polyolefins broadly.

“Epolene Polymers” suggests using Epolene coupling agents in composites of natural fibers used to reinforce polyolefins (second page, paragraphs 1 and 4).

“Epolene Waxes” establishes that maleated polyolefins C-16, C-18, E-43 were available and were advertised to have certain MWDs, at the time of the invention. In particular, the maleated polyethylenes C-16 and C-18 have MWDs of 4.6 and 2.6 respectively (page 8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the maleated polyethylenes of “Epolene Polymers” in the mixtures of '037 given the broad suggestion that maleated polyolefins would be useful.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Godavarti et al. (US 6265037-B1) in view of “Epolene Polymers” (publication WA-5E, November 2002, Eastman Chemical Company) taken with evidentiary reference

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"Epolene Waxes" (publication F-301E, December 1996, Eastman Chemical Company) and further in view of Wolcott et al. ("Coupling Agent/Lubricant...").

The present claim is broadly discussed hereinabove in the section **Claims Analysis** which is incorporated by reference.

References '037, "Epolene Polymers" and "Epolene Waxes" are discussed immediately above, which is incorporated here by reference.

Wolcott et al. discloses the use of fatty ester amide lubricant for these wood plastic composites. It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the lubricants of Wolcott et al. in the mixtures of the rejection based on the combination of references since it is suggested by Wolcott et al. to be beneficial.

Claims 1-14 are rejected under 35 U.S.C. 102(b) as anticipated by Sigworth et al. ("The Use of Functionalized Polyolefins...").

The present claims are broadly discussed hereinabove in the section **Claims Analysis** which is incorporated by reference.

The reference discloses natural fiber and polyolefin composites in which maleated polyolefins are employed. The maleated polyethylenes, Polybond 3009 and 3109, are reasonably thought to have broad molecular weight distribution based on the disclosures of the similar Epolene products, and thus necessarily inherently satisfy the present claims.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sigworth et al. ("The Use of Functionalized Polyolefins...") and further in view of Wolcott et al. ("Coupling Agent/Lubricant...").

The present claim is broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

Reference Sigworth et al. is discussed immediately above, which is incorporated here by reference.

Wolcott et al. discloses the use of fatty ester amide lubricant for these wood plastic composites. It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the lubricants of Wolcott et al. in the mixtures of the rejection based on the reference since it is suggested by Wolcott et al. to be beneficial.

Citation of Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mitsuno et al. (US 4868226) discloses polypropylene filled mixtures using polypropylene, modified polypropylene containing maleic anhydride monomers (column 8, lines 17-19, column 9, lines 21-26), and woodmeal or cellulose fiber (column 4, lines 27-28). It cannot be determined what the MWD is for the maleated polypropylenes.

Krishnaswamy (US 2003/0065059-A1) discloses polypropylene filled mixtures using polypropylene, maleic anhydride modified polypropylene, Polybond 3200

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(paragraph 64), and fibrillated bast fibers. It cannot be determined what the MWD is for the maleated polypropylene.

Jacoby et al. (US 2002/0161072-A1) is considered cumulative to the disclosure of Godavarti et al. (US 6265037-B1).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Thexton whose telephone number is 571-272-1125. The examiner can normally be reached on Monday-Friday, 9:30 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S. Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Matthew A. Thexton

Matthew A. Thexton
Primary Examiner
Art Unit 1714